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SEQUENCE LISTING

<110> MedImmune Vaccines, Inc.
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Lu, Bin
Cheng, Xing
Zhou, Helen

<120> Functional Mutations in Respiratory Syncytial Virus

<130> 26-000320US

<140> US 10/672,302

<141> 2003-09-26

<160> 84

<170> PatentIn version 3.1

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Met Ile Glu Lys
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Met Ile Glu Lys
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Met Ile Glu Lys
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Leu Ile Asn Ser
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Met Ile Glu Lys
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Met Ile Glu Lys
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Met Ile Glu Lys
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35 40 45

Ser Met Asp Lys Ser Ile Asp Thr Leu Ser Glu Ile Ser Gly Ala Ala
50 55 60

Glu Leu Asp Arg Thr Glu Glu Tyr Ala Leu Gly Val Val Gly Val Leu
65 70 75 80

Glu Ser Tyr Ile Gly Ser Ile Asn Asn Ile Thr Lys Gln Ser Ala Cys
85 90 95

Val Ala Met Ser Lys Leu Leu Thr Glu Leu Asn Ser Asp Asp Ile Lys
100 105 110

Lys Leu Arg Asp Asn Glu Glu Leu Asn Ser Pro Lys Ile Arg Val Tyr
115 120 125

Asn Thr Val Ile Ser Tyr Ile Glu Ser Asn Arg Lys Asn Asn Lys Gln
130 135 140

Thr Ile His Leu Leu Lys Arg Leu Pro Ala Asp Val Leu Lys Lys Thr
145 150 155 160

Ile Lys Asn Thr Leu Asp Ile His Lys Ser Ile Thr Ile Asn Asn Pro
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<213> Pneumonia virus of mice

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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp Pro Leu Lys
 20 25 30

Thr Leu Met Leu Arg Gln Asn Tyr Met Leu Asn Arg Ile Tyr Arg Phe
 35 40 45

Leu Asp Thr Asn Thr Asp Ala Met Ser Asp Val Ser Gly Phe Asp Ala
 50 55 60

Pro Gln Arg Thr Ala Glu Tyr Ala Leu Gly Thr Ile Gly Val Leu Lys
 65 70 75 80

Ser Tyr Leu Glu Lys Thr Asn Asn Ile Thr Lys Ser Ile Ala Cys Gly
 85 90 95

Ser Leu Ile Thr Val Leu Gln Asn Leu Asp Val Gly Leu Val Ile Gln
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Ala Arg Asp Ser Asn Thr Glu Asp Thr Asn Tyr Leu Arg Ser Cys Asn
 115 120 125

Thr Ile Leu Ser Tyr Ile Asp Lys Ile His Lys Lys Arg Gln Ile Ile
 130 135 140

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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Gly Arg Asn Cys Lys Tyr Ser His Asn Tyr Trp Glu Trp
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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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 1 5 10 15

Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
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Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
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Arg	Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
			20					25					30

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Gly	Arg	Arg	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
			20					25				

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Met	Ser	Val	Arg	Pro	Cys	Lys	Phe	Glu	Val	Gln	Gly	Phe	Cys	Leu	Arg
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Gly	Arg	Arg	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
			20					25				

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1				5					10					15	

Asn	Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
			20					25				30	

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Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
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Gly	Arg	Asn	Cys	Lys	Tyr	Ser	His	Lys	Tyr	Trp	Glu	Trp
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Gly Arg Arg Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Gly Arg Asn Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Met Ser Val Arg Pro Cys Lys Phe Glu Val Arg Gly His Cys Leu Asn
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Gly Arg Arg Cys Lys Tyr Ser His Lys Tyr Trp Glu Trp
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Asn Gly Lys Arg Cys His Phe Ser His Asn Tyr Phe Glu Trp
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Asn Gly Lys Asn Cys His Phe Ser His Asn Tyr Phe Glu Trp
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<400> 48

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Asn Gly Lys Asn Cys His Phe Ser His Asn Tyr Phe Glu Trp
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Asn Gly Lys Asn Cys His Phe Ser His Asn Tyr Phe Glu Trp
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Asn Gly Lys Asn Cys His Phe Ser His Asn Tyr Phe Glu Trp
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gaagatatg

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Ile	Glu	Thr	Phe	Asp	Asn	Asn	Glu	Glu	Glu	Ser	Ser	Tyr	Ser	Glu	Glu
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Leu	Leu	Glu	Gly	Asn	Asp	Ser	Asp	Asn	Asp	Leu	Ser	Leu	Glu	Phe
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Ile	Glu	Thr	Phe	Asp	Asn	Asn	Glu	Glu	Glu	Ser	Ser	Tyr	Ser	Glu	Glu
1				5					10					15	

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<213> Human respiratory syncytial virus strain B18537

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Leu	Leu	Glu	Asp	Asn	Asp	Ser	Asp	Asn	Asp	Leu	Ser	Leu	Asp	Phe
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Leu	Asp	Leu	Leu	Asp	Asn	Glu	Glu	Glu	Glu	Ser	Ser	Leu	Thr	Glu	Glu
1				5					10					15	

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Ile	Val	Glu	Asp	Glu	Ser	Thr	Ser	Gly	Glu	Ser	Glu	Glu
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<210> 62

<211> 16

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<213> Bovine respiratory syncytial virus

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<210> 63

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<212> PRT

<213> Bovine respiratory syncytial virus

<400> 63

Val	Leu	Glu	Asp	Glu	Ser	Ser	Asp	Asn	Asp	Leu	Ser	Leu	Glu	Phe
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<210> 64

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Leu Glu Leu Leu Asp Asn Asp Asp Asp Glu Ser Ser Leu Thr Glu Glu
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<213> Avian pneumovirus

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Ile Val Glu Asp Glu Ser Thr Ser Gly Glu Ser Glu Glu
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<213> Ovine respiratory syncytial virus

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Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Ser Ser Tyr Ser Asp Glu
 1 5 10 15

<210> 67

<211> 15

<212> PRT

<213> Ovine respiratory syncytial virus

<400> 67

Ile Leu Glu Glu Asp Asn Ser Asp Asn Asp Leu Ser Leu Glu Phe
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Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Leu Arg Tyr Leu Glu Glu
 1 5 10 15

<210> 69

<211> 15

<212> PRT

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<220>

<223> mutant of human RSV A2 P

<400> 69

Leu Leu Glu Gly Asn Asp Ser Asp Asn Asp Leu Ser Leu Glu Phe
 1 5 10 15

<210> 70
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<400> 70

Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Asp Asp Tyr Asp Glu Glu
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<220>
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<400> 71

Leu Leu Glu Gly Asn Asp Ser Asp Asn Asp Leu Ser Leu Glu Phe
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<210> 72
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<220>
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Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Ser Ser Tyr Ser Glu Glu
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<210> 73
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<220>
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<400> 73

Leu Leu Glu Gly Asn Asp Asp Asp Asn Asp Leu Asp Leu Glu Phe
 1 5 10 15

<210> 74
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 <212> PRT
 <213> artificial

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<400> 74

Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Ser Ser Tyr Ser Glu Glu

1 5 10 15

<210> 75
 <211> 15
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 <213> artificial

<220>
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<400> 75

Leu Leu Glu Gly Asn Asp Ala Asp Asn Asp Leu Ala Leu Glu Phe
 1 5 10 15

<210> 76
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<220>
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<400> 76

Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Leu Arg Tyr Leu Glu Glu
 1 5 10 15

<210> 77
 <211> 15
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<400> 77

Leu Leu Glu Gly Asn Asp Ala Asp Asn Asp Leu Ala Leu Glu Phe
 1 5 10 15

<210> 78
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<400> 78

Ile Glu Thr Phe Asp Asn Asn Glu Glu Glu Leu Arg Tyr Leu Glu Glu
 1 5 10 15

<210> 79
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<220>
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<400> 79

Leu Leu Glu Gly Asn Asp Asp Asp Asn Asp Leu Asp Leu Glu Phe
 1 5 10 15

<210> 80

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<212> PRT

<213> Human respiratory syncytial virus strain A2

<400> 80

Ile Gly Leu Arg Glu Glu
 1 5

<210> 81

<211> 6

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<223> example conservatively substituted variation of RSV A2 P residues
 171-176

<400> 81

Val Gly Ile Lys Asp Asp
 1 5

<210> 82

<211> 6

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<223> example conservatively substituted variation of RSV A2 P residues
 171-176

<400> 82

Ile Gly Val Lys Asp Glu
 1 5

<210> 83

<211> 241

<212> PRT

<213> Human respiratory syncytial virus strain A2

<400> 83

Met Glu Lys Phe Ala Pro Glu Phe His Gly Glu Asp Ala Asn Asn Arg
 1 5 10 15

Ala Thr Lys Phe Leu Glu Ser Ile Lys Gly Lys Phe Thr Ser Pro Lys
 20 25 30

Asp Pro Lys Lys Lys Asp Ser Ile Ile Ser Val Asn Ser Ile Asp Ile
 35 40 45

Glu Val Thr Lys Glu Ser Pro Ile Thr Ser Asn Ser Thr Ile Ile Asn
 Page 20

50

55

60

Pro Thr Asn Glu Thr Asp Asp Thr Ala Gly Asn Lys Pro Asn Tyr Gln
65 70 75 80

Arg Lys Pro Leu Val Ser Phe Lys Glu Asp Pro Thr Pro Ser Asp Asn
85 90 95

Pro Phe Ser Lys Leu Tyr Lys Glu Thr Ile Glu Thr Phe Asp Asn Asn
100 105 110

Glu Glu Glu Ser Ser Tyr Ser Tyr Glu Glu Ile Asn Asp Gln Thr Asn
115 120 125

Asp Asn Ile Thr Ala Arg Leu Asp Arg Ile Asp Glu Lys Leu Ser Glu
130 135 140

Ile Leu Gly Met Leu His Thr Leu Val Val Ala Ser Ala Gly Pro Thr
145 150 155 160

Ser Ala Arg Asp Gly Ile Arg Asp Ala Met Ile Gly Leu Arg Glu Glu
165 170 175

Met Ile Glu Lys Ile Arg Thr Glu Ala Leu Met Thr Asn Asp Arg Leu
180 185 190

Glu Ala Met Ala Arg Leu Arg Asn Glu Glu Ser Glu Lys Met Ala Lys
195 200 205

Asp Thr Ser Asp Glu Val Ser Leu Asn Pro Thr Ser Glu Lys Leu Asn
210 215 220

Asn Leu Leu Glu Gly Asn Asp Ser Asp Asn Asp Leu Ser Leu Glu Asp
225 230 235 240

Phe

<210> 84

<211> 90

<212> PRT

<213> Human respiratory syncytial virus strain A2

<400> 84

Met Thr Met Pro Lys Ile Met Ile Leu Pro Asp Lys Tyr Pro Cys Ser
1 5 10 15

Ile Thr Ser Ile Leu Ile Thr Ser Arg Cys Arg Val Thr Met Tyr Asn
20 25 30

Gln Lys Asn Thr Leu Cys Leu Asn Gln Asn Asn Pro Asn Asn His Met

35 26-000320US.ST251.txt 40 45

Tyr Ser Pro Asn Gln Thr Phe Asn Glu Ile His Trp Thr Ser Gln Glu
50 55 60

Leu Ile Asp Thr Ile Gln Asn Phe Leu Gln His Leu Gly Ile Ile Glu
65 70 75 80

Asp Ile Tyr Thr Ile Tyr Ile Leu Val Ser
85 90